APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/920,138	07/31/2001	Zhen Liu	YOR920000760US2	5664

35526	7590	01/25/2005	EXAMINER
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2116	

DATE MAILED: 01/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
-. If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>01 November 2004</u>.

2a) ☒ This action is **FINAL**.   2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>1-27</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☒ Claim(s) <u>4,6,13,15,22 and 24</u> is/are allowed.

6) ☒ Claim(s) <u>1-3,5,7-12,14,16-21,23 and 25-27</u> is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some * c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

1.   It is hereby acknowledged that the following papers have been received and placed of

record in the file: Amendment dated November 1, 2004.

2.   Claims 1-27 are presented for examination.

Claim Rejections - 35 USC § 102

3.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless --
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4.   Claims 1-3, 5, 7-12, 14, 16-18 are rejected under 35 U.S.C. 102(e) as being anticipated by

Skelly et al., U.S. Patent 6661810, hereinafter Skelly.

5.   In re claim 1, Skelly discloses a method for removing the effect of clock skew between

data processing systems [abstract; col.3, l.62 -- col.4, l.13], comprising:

- Making delay measurements between two data processing systems [device 102s; sender

  and receiver] connected by a network [100] [fig.1; col.9, ll.1-6; col.10, ll.29-39].

- Forming a set of data points, wherein each data point in the set of data points comprises a

  time [t] and a delay measurement [d] for the respective time [fig.4; col.7, ll.7-20; col.9,

  ll.6-12].

- Finding a convex hull [feasible region] of the set of data points, wherein the convex hull

  is bounded by a number of line segments [col.9, ll.16-19; col.10, ll.50-63; varying y-

  intercept and slope yields various lines bounding feasible region].

- Selecting a one of the line segments that optimizes an objective function [col.9, ll.19-24; col.10, l.64 -- col.11, l.20].

- Extrapolating the one of the line segments to obtain an affine function [col.9, ll.24-26].

- Removing the effect of clock skew between the two data processing systems as characterized by the affine function [col.2, ll.51-58; col.13, l.65 -- col.19, l.40].

6.   As to claims 2 and 11, Skelly discloses that the one of the line segments is selected so that a line containing the one of the line segments will contain a maximal number of data points from the set of data points [col.17, ll.1-7].

7.   As to claims 3 and 12, Skelly discloses that the one of the line segments is selected so that the sum of the vertical distances between each of the set of data points and a line containing the one of the line segments will be minimized [col.17, ll.1-7].

8.   As to claims 5 and 14, Skelly discloses that the one of the line segments is selected so that the area between a plot of a piecewise-linear function containing the set of data points [line skimming through bottom of mass of scatter plot] and a line containing the one of the line segments will be minimized [col.10, l.64 -- col.11, l.20; col.16, ll.54-67].

9.   As to claims 7 and 16, Skelly discloses the x-coordinate of each data point in the set of data points represents a time measurement [fig.4, col.7, ll.7-20; col.9, ll.6-12].

10.   As to claims 8 and 17, Skelly discloses the y-coordinate of each data point in the set of data points represents a delay measurement [fig.4, col.7, ll.7-20; col.9, ll.6-12].

11.   As to claims 9 and 18, Skelly discloses the delay measurement is a communication delay between two data processing systems connected by a network [100] [col.4, ll.24-25; col.7, ll.21-23].

12.   In re claim 10, Skelly discloses each and every limitation of the claim as discussed above

in reference to claim 1. Skelly discloses the method of removing the effect of clock skew

between data processing systems; therefore, Skelly discloses the computer program product, in a

computer-readable medium, for removing the effect of clock skew between data processing

systems, comprising instructions for executing the method.

Claim Rejections - 35 USC § 103

13.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

14.   Claims 19-21, 23, 25-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Skelly as applied to claims 1 and 9 above, and further in view of Forbes et al., U.S. Patent

6539490, hereinafter Forbes.

15.   In re claim 19, Skelly discloses each and every limitation of the claim as discussed above

in reference to claim 10. Skelly further discloses a data processing system [device 102] for

removing the effect of clock skew between data processing systems [abstract; col.3, 1.62 -- col.4,

1.13], comprising:

- A processing unit [110], wherein the processing unit contains at least one processor

  [col.4, 1.16].

- A memory [col.4, 1.15; inherently, some kind of memory is required in order for

  computer to function].

- A set of instructions [linear program], wherein the processing unit executes the set of instructions to perform the acts of [col.8, l.55 -- col.9, l.1] as discussed in claim 10 which further references claim 1.

16.   Skelly did not discuss a particular interconnection of the components in the data processing system.

17.   Forbes discloses a data processing system [100] for removing the effect of clock skew between data processing systems [abstract], comprising:

- A bus system [170].

- A processing unit [110] connected to the bus system, wherein the processing unit contains at least one processor [fig.15; col.7, l.54].

- A memory [RAM 160] connected to the bus system [fig.15].

18.   It would have been obvious to one of ordinary skill in the art, having the teachings of Skelly and Forbes before him at the time the invention was made, to use the bus system interconnection taught by Forbes with the system disclosed by Skelly as the bus system interconnection taught by Forbes is a well known interconnection suitable for use in the system of Skelly. One of ordinary skill in the art would have been motivated to make such a combination as it provides a way for the components in the system to communicate [col.7, ll.55-65].

19.   As to claim 20, Skelly discloses that the one of the line segments is selected so that a line containing the one of the line segments will contain a maximal number of data points from the set of data points [col.17, ll.1-7].

20.   As to claim 21, Skelly discloses that the one of the line segments is selected so that the

sum of the vertical distances between each of the set of data points and a line containing the one

of the line segments will be minimized [col.17, ll.1-7].

21.   As to claim 23, Skelly discloses that the one of the line segments is selected so that the

area between a plot of a piecewise-linear function containing the set of data points [line

skimming through bottom of mass of scatter plot] and a line containing the one of the line

segments will be minimized [col.10, l.64 -- col.11, l.20; col.16, ll.54-67].

22.   As to claim 25, Skelly discloses the x-coordinate of each data point in the set of data

points represents a time measurement [fig.4, col.7, ll.7-20; col.9, ll.6-12].

23.   As to claim 26, Skelly discloses the y-coordinate of each data point in the set of data

points represents a delay measurement [fig.4, col.7, ll.7-20; col.9, ll.6-12].

24.   As to claim 27, Skelly discloses the delay measurement is a communication delay

between two data processing systems connected by a network [100] [col.4, ll.24-25; col.7, ll.21-

23].

Allowable Subject Matter

25.   Claims 4, 6, 13, 15, 22, and 24 are allowed.

26.   As allowable subject matter has been indicated, applicant's reply must either comply with

all formal requirements or specifically traverse each requirement not complied with. See 37

CFR 1.111(b) and MPEP § 707.07(a).

27.   The following is a statement of reasons for the indication of allowable subject matter: the

claims are allowable because none of the references cited, either alone or in combination

discloses or renders obvious a method, a computer program product, or a data processing system

for removing the effect of clock skew between data processing systems, comprising all the

limitations stipulated in respective claims.

Response to Arguments

28.   All rejections of claim limitations as filed prior to Amendment dated November 1, 2004

not argued in entirety or substantively in response filed as said Amendment have been conceded

by Applicant and the rejections are maintained from henceforth.

29.   Applicant's arguments, with respect to claim 1, have been fully considered but they are

not persuasive.

30.   Applicant alleges that "Skelly does not disclose 'finding a convex hull of the set of data

points, wherein the convex hull is bounded by a number of line segments". Examiner disagrees

as the following details. Firstly, in the previous Office Action, Examiner did cite col.10, ll.50-63

of Skelly as Applicant correctly conceded. This specific citation defined the feasible region

according to the solution of: $di - (a-1)ti + B >= 0$, $1 <= i <= N$ [Appendix A]. Secondly,

Examiner clearly asserted in the previous Office Action in part 3 that the feasible region [convex

hull] can be derived from varying the y-intercept and slope yields various lines that would form

the boundary of the feasible region. In case Applicant did not have the opportunity to fully read

and comprehend the Skelly reference, Examiner hereby points exactly how Examiner is applying

the Skelly reference: Skelly's solution represents various lines with B representing the y-

intercept and (a-1) representing the slope in the simplest form. Taking a small step further, the

convex hull can be formed by "a number of line segments" with different y-intercepts and slopes

but common interception points [a polygon is formed by at least three lines]. Therefore, as

demonstrated above, Skelly does disclose 'finding a convex hull of the set of data points,

wherein the convex hull is bounded by a number of line segments" and the rejection is

respectfully maintained.

31.   Applicant alleges that "the line that is fit in Skelly ... is not the one of the line segments

bounding a convex hull that optimizes an objective function ... nor is such a line segment

extrapolated to obtain an affine function". Applicant's arguments fail to comply with 37

CFR 1.111(b) because they amount to a general allegation that the claims define a patentable

invention without specifically pointing out how the language of the claims patentably

distinguishes them from the references. The mere allegation begs the question of what Applicant

has in mind in regards to the definitions of objective and affine functions and what aspects of

those specific definitions are represented in the claim limitation that were not addressed by

Skelly.

32.   As demonstrated above, Applicant's arguments, with respect to claim 1, are not

persuasive and the rejection of claim 1 is respectfully maintained.

33.   All other claims were not argued separately.

Conclusion

34.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tse Chen whose telephone number is (571) 272-3672. The examiner can normally be reached on Monday - Friday 9AM - 5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynne Browne can be reached on (571) 272-3670. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tse Chen
January 15, 2005

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